

protect your neighbor and other members of your family from the disease.

Dirt in the house or yard invites disease. Rats and flies are carriers of disease; therefore, have no filth about for them to feed on. Use the garbage can for all scraps of food and waste matter.

#### Care of Milk and Food Cooking.

When you buy milk, cool it at once by setting the vessel in a pan of cold water (ice water, if possible) then keep the milk in a cool place at all times, protecting it from flies. Scald the vessels or bottles thoroughly before placing milk in them. All food, meats, vegetables and fruits should be protected from flies and rats. Never drink the Hydrant water.

Give your help to the Pittsburgh Buffalo Company, whose aim is to protect you and your family against sickness and disease. Help in this work to make Marianna a model town, with clean houses, yards and streets.—Marianna Board of Health.

(Concluded next issue.)

#### THE DEAD MAN'S HANDLE.

One of the most ingenious pieces of mechanism for the elimination of the human element in certain circumstances is the electrical controller handle used on the London Underground Railways, the Liverpool Overhead Railway, and the Subway and elevated railways of New York, Boston and other large cities. It is usually referred to by the somewhat gruesome name of the 'dead man's handle'. It consists of the ordinary detachable control arm with the addition of a knob or button which is pressed down by the operator to make electrical connection between the supply current and the controller. The movement of the arm is necessary to connect motor and supply in the usual way. The button on the top of the handle is depressed about half an inch and while running is kept in that position by the weight of the man's hand, which must always be on it in order to ensure the flow of current. The button is held up by a coil spring below it, but may be allowed to rise through a distance of three-eighths of an inch without breaking the electric circuit; the operator is thus permitted a certain amount of freedom so that his hand will not become cramped. If, however, he should fall back in a faint or become otherwise incapacitated his hand would relax its grasp, and the button being forced up by the spring below it the current would at once be cut off from the motors, and at the same time the brake would be applied. In the presence of impending danger, the operator's quickest and most efficient action would be to withdraw his hand, and he would thus secure the instant cutting off of the current and the application of the brakes.

Another form of apparatus which mechanically removes the possibility of human error is the stop signal, used on the underground and overhead railways here and in America. It consists of a T-headed trip placed outside the running rail. This trip is raised when the adjacent visual signal goes to 'danger', and sinks to an almost horizontal position when the signal is 'off'. In the vertical or stop position, the head of the trip engages with a handle, or other suitable device, of an air exhaust valve attached to the brake system on the carriages. If the forward of the first carriage over-runs the danger signal the trip, striking the air valve handle, at once applies the brake. In this way

the disregard of a danger signal or a miscalculation of distance results in the automatic stopping of the train.

On some lines the signals at interlocking cabins are semi-automatic, that is, while they are operated from the signal cabins, they are controlled by track circuits. The signalman is able to put his lever back far enough to place the signal at 'danger' yet he cannot put it back fully until the train has passed the fouling point. This prevents him from pulling over the levers of conflicting points or signals. At interlockings the signals are raised to the 'danger' position before the passage of the train independently of the signalman, but he is compelled to bring the signal lever back to normal before the signal itself can be again lowered to the 'safety' position.

#### PREVENTION OF HASTY ACTION.

A method of indicating to the driver of a New York Subway train that all the doors of the carriages have been closed is now in operation. A small electric bulb in the driver's cab glows when all the doors have been shut, as they have each closed an electric contact. In this case the position in the train of the door last to be closed does not matter. If any door is left open the lamp does not light, and until it does, the driver may not start the train. In order to save current and prolong the life of the bulb, the driver breaks the circuit by opening a small switch in the cab, after receiving the signal that the doors have all been closed, which is also the signal to start. He closes the circuit after the stop has been made, and when the open doors have again been closed, his starting lamp glows once more. When the bellcord is used for starting, the signal first given is from the rear and it is relayed forward by the guards on the platforms of the carriages. The electric door closing contact prevents a signal from being given if a door is open. Thus hasty action is eliminated.

In many electric lifts in America the controller handle is so made that it requires one complete rotation before the operating mechanism is removed. This prevents the car from being inadvertently started by a passenger or the operator pushing against the handle and giving it a partial turn. It also prevents sudden or hasty action on the part of the operator. A certain small amount of time is necessarily consumed in moving the handle through what may be called the 'idle circle of motion', and these few seconds give the man time to think. In other cases the controller handle is weighted so that it flies back to the neutral position, cuts off the current, and so stops the car, when the hand of the operator is withdrawn. Hence to start the life a definite purposive action on the part of the operator is required, and a slight knock against the handle would be followed by a quick swing back to the neutral position, with current promptly cut off.

The justification of all mechanical appliances whether they stop a train, warn a driver, inconvenience an operator, or enforce obedience to good practice, is from first to last the protection of the many who have entrusted their lives to the vigilance, the competence, and the good judgement of one. This operating human element is not entirely deprived of its best features, but is supplemented so far as possible by what may be called 'mechanical safety,' in the performance of the many duties now imposed by the exacting conditions of modern railway travel and industrial life.